

REMARKS

Claims 1, 3, 9, 12, 17-27 are pending. Claims 17 and 22 have been amended to more clearly describe the claimed subject matter. No new matter has been added.

Rejection under 35 U.S.C. § 112

The Examiner has rejected claims 22-27 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Office Action at page 2. Specifically, claim 22 appears to be missing language after “the through-hole array.” Applicants have amended claims 17 and 22 to delete this phrase from the claim. Applicants request reconsideration and withdrawal of this rejection.

Rejection under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1, 3, 9, 12 and 17-27 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 4,682,890 to de Macario et al. (“de Macario”), in view of U.S. Patent No. 6,024,925 to Little et al. (“Little”), U.S. Patent No. 3,568,735 to Lancaster et al. (“Lancaster”), and U.S. Patent No. 4,478,094 to Salomaa et al. (“Salomaa”). Claims 1, 17, and 27 are independent.

Claim 1 refers to a method for loading a plurality of liquid samples into a plurality of through-hole arrays, the liquid samples residing in wells of a microtiter plate characterized by a well-to-well spacing, the through-hole arrays including a platen having a hydrophobic surface and a plurality of through-holes having hydrophilic surfaces and characterized by a hole spacing that is an integral fraction of the well-to-well spacing of the microtiter plate, the method including stacking the plurality of through-hole arrays in registration, wherein each of the plurality of through-hole arrays is separated by a distance s , wherein s is a non-zero dimension; positioning an array of transfer members, each transfer member disposed for drawing liquid from a distinct well of the microtiter plate; drawing liquid samples from the wells of the microtiter plate to each of the transfer members; registering the array of transfer members with a subset of through-holes of the through-hole arrays, wherein the array of transfer members is positioned in proximity to an outermost through-hole array; applying a pressure to the transfer members to

dispense the liquid samples from the transfer members into through-holes of the through-hole arrays, wherein a fluidic bridge is established between registered holes in the plurality of through-hole arrays; and removing the pressure from the transfer members to break the fluidic bridge; thereby depositing liquid samples from each transfer member into a plurality of through-holes.

Claim 17 refers to a method for loading a plurality of liquid samples into a plurality of through-hole arrays, the liquid samples residing in wells of a microtiter plate characterized by a well-to-well spacing, the through-hole arrays including a platen having a plurality of through-holes, the platen having a hydrophobic surface and the through-holes having a hydrophilic surface, the method including stacking the plurality of through-hole arrays in registration, wherein each of the plurality of through-hole arrays is separated by a distance s , wherein s is a non-zero dimension; positioning any array of transfer members, each transfer member disposed for drawing a liquid from a distinct well of the microtiter plate; drawing liquid samples from the wells of the microtiter plate to each of the transfer members; registering the array of transfer members with a subset of through-holes of the through-hole arrays, wherein the array of transfer members is positioned in proximity to an outermost through-hole array; applying a pressure to the transfer members to dispense the liquid samples from the transfer members into through-holes of the through-hole arrays, wherein a fluidic bridge is established between registered holes in the plurality of through-hole arrays; and removing the pressure from the transfer members to break the fluidic bridge; thereby depositing liquid samples from each transfer member into a plurality of through-holes.

Claim 22 refers to a method for loading a plurality of liquid samples into a plurality of through-hole arrays, the through-hole arrays including a platen having a plurality of through-holes, the platen having a hydrophobic surface and the through-holes having a hydrophilic surface, the method including stacking the plurality of through-hole arrays in registration, wherein each of the plurality of through-hole arrays is separated by a distance s , wherein s is a non-zero dimension; registering an array of transfer members with a subset of through-holes of the through-hole arrays, wherein the array of transfer members is positioned in proximity to an outermost through-hole array; and applying pressure to the transfer members to dispense the liquid samples from the transfer members into through-holes of the through-hole arrays, wherein

a fluidic bridge is established between the registered holes in plurality of through-hole arrays; thereby depositing liquid samples from each transfer member into a plurality of through-holes.

de Macario teaches an apparatus for use in a horizontal beam spectrophotometer which obviates the conventional cuvettes and instead has "plates having a number of elements that retain a drop or drops of samples to be analyzed by the spectrophotometer." (see de Macario at col. 4, lines 20-22). de Macario does not teach a method for loading a plurality of liquid samples into a plurality of through-hole arrays, the through-hole arrays including a platen having a hydrophobic surface and a plurality of through-holes having hydrophilic surfaces, wherein a fluidic bridge is established between registered holes in the plurality of through-hole arrays; and removing the pressure from the transfer members to break the fluidic bridge; thereby depositing liquid samples from each transfer member into a plurality of through-holes. Indeed, de Macario makes no mention of the hydrophilic surfaces nor the formation or break of fluidic bridges.

These omissions are not supplied by Little. Little teaches dispensing tools used to generate element arrays of sample material on a substrate surface (see Little, col. 2, line 66 to col. 3, line 1). Little does not teach a method for loading a plurality of liquid samples into a plurality of through-hole arrays, the through-hole arrays including a platen having a hydrophobic surface and a plurality of through-holes having hydrophilic surfaces, wherein a fluidic bridge is established between registered holes in the plurality of through-hole arrays; and removing the pressure from the transfer members to break the fluidic bridge; thereby depositing liquid samples from each transfer member into a plurality of through-holes. Indeed, Little makes no mention of the hydrophilic surfaces nor the formation or break of fluidic bridges.

Furthermore, these omissions are not supplied by Lancaster. Lancaster teaches a dispensing tool which simultaneously withdraws liquid from a reservoir into each of a plurality of needles or pipettes and dispenses the same amount into corresponding specimen containers or wells of a microtitration plate (see Lancaster, col. 1, lines 37-45). Lancaster does not teach a method for loading a plurality of liquid samples into a plurality of through-hole arrays, the through-hole arrays including a platen having a hydrophobic surface and a plurality of through-holes having hydrophilic surfaces, wherein a fluidic bridge is established between registered holes in the plurality of through-hole arrays; and removing the pressure from the transfer members to break the fluidic bridge; thereby depositing liquid samples from each transfer

member into a plurality of through-holes. Indeed, Lancaster makes no mention of the hydrophilic surfaces nor the formation or break of fluidic bridges.

Finally, these omissions are not supplied by Salomaa. Salomaa teaches a liquid sample system wherein one work station accommodates a titer tray having a plurality of rows of receptacles for housing the liquid sample and diluents and a second work station that accommodates a rack that houses plural rows of disposable pipette tips (see Salomaa, col. 2, lines 30-35). Salomaa does not teach a method for loading a plurality of liquid samples into a plurality of through-hole arrays, the through-hole arrays including a platen having a hydrophobic surface and a plurality of through-holes having hydrophilic surfaces, wherein a fluidic bridge is established between registered holes in the plurality of through-hole arrays; and removing the pressure from the transfer members to break the fluidic bridge; thereby depositing liquid samples from each transfer member into a plurality of through-holes. Indeed, Salomaa makes no mention of the hydrophilic surfaces nor the formation or break of fluidic bridges.

Accordingly, none of de Macario, Little, Lancaster, nor Salomaa, either alone or in combination, teaches, suggests, or motivates a person of ordinary skill in the art to make a method of the instant claims. Therefore, claims 1, 17, 22, and any claims that depend therefrom are patentable over de Macario, Little, Lancaster and Salomaa.

Applicant : Hunter, I., et al.
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CONCLUSION

Applicants ask that all claims be allowed. Additionally enclosed is a petition for a two-month extension of time. Please apply any charges or credits to deposit account 19-4293.

Respectfully submitted,

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/Harold H. Fox Reg # 41498/
Harold H. Fox
Reg. No. 41,498

Customer No. 27890
Steptoe & Johnson LLP
1330 Connecticut Avenue, NW
Washington, DC 20036-1795
Phone: 202-429-3000
Fax: 202-429-3902